

09/478188  
STN Search Summary

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FILE 'CAPLUS' ENTERED AT 17:08:35 ON 15 MAR 2002  
L1 104 S C-1027  
L2 840 S ENEDIYNE  
L3 1034 S NEOCARZINOSTATIN  
L4 62 S KEDARCIDIN  
L5 18 S MADUROPEPTIN  
L6 201 S DYNEMICIN  
L7 2 S CALCHEAMICIN  
L8 201 S ESPERAMICIN  
L9 2045 S L1 OR L2 OR L3 OR L4 OR L5 OR L6 OR L7 OR L8  
L10 78 S L9 AND (STREPTOMYCES OR ACTINOMYCES)  
L11 8 S L10 AND BIOSYNTH?  
L12 70 S L10 NOT L11  
L13 8 S L12 AND (GENE?)

L11 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2002 ACS  
AN 2000:332948 CAPLUS  
TI Isolation and characterization of the C-1027  
biosynthesis gene cluster from *Streptomyces globisporus*:  
A model for the enediyne family of antitumor antibiotics.  
AU Liu, Wen; Christenson, Steven D.; Standage, Scott; Shen, Ben  
SO Book of Abstracts, 219th ACS National Meeting, San Francisco, CA, March  
26-30, 2000 (2000), ORGN-820 Publisher: American Chemical Society,  
Washington, D. C.  
AB C-1027, the most potent member of the enediyne  
antitumor antibiotic family, is produced by *Streptomyces*  
*globisporus* (Sg) and consists of an apoprotein (encoded by cagA) and a  
non-peptidic chromophore. The C-1027 chromophore  
could be viewed as being derived biosynthetically from a  
benzoxazolinate, a deoxyamino hexose, a beta-amino acid, and an  
enediyne core. Adopting a strategy to clone the C-  
1027 biosynthesis gene cluster by mapping a putative  
dNDP-glucose 4,6-dehydratase gene to cagA, we have cloned and  
characterized a 75-kb gene cluster from Sg, including cagA. The  
involvement of the cloned gene cluster in C-1027  
biosynthesis was demonstrated by gene disruptions to generate  
C-1027-nonproducing mutants and by complementing  
C-1027-nonproducing mutants *in vivo* to restore  
C-1027 prodn. These results represent the first cloning  
of a gene cluster for enediyne antitumor antibiotic  
biosynthesis and provide an excellent starting point for future  
genetic and biochem. investigations of C-1027  
biosynthesis.

L11 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2002 ACS  
AN 2000:69539 CAPLUS  
TI Genes for production of the enediyne antitumor antibiotic  
C-1027 in *Streptomyces globisporus* are  
clustered with the cagA gene that encodes the C-1027  
apoprotein  
AU Liu, Wen; Shen, Ben  
SO *Antimicrob. Agents Chemother.* (2000), 44(2), 382-392

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L11 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2002 ACS  
AN 1999:145587 CAPLUS  
TI Biosynthetic gene cluster for the enediyne antitumor antibiotic C-1027 from *streptomyces globisporus* C-1027  
AU Shen, Ben; Liu, Wen; Christenson, Steven D.  
SO Book of Abstracts, 217th ACS National Meeting, Anaheim, Calif., March 21-25 (1999), ORGN-154 Publisher: American Chemical Society, Washington, D. C.  
AB C-1027, produced by *Streptomyces globisporus* C-1027, is the most potent member of the enediyne family. As the first step in attempting to synthesize novel antitumor agents by metabolic pathway engineering, we have: (1) cloned 55kb *S. globisporus* C-1027 DNA that harbors both biosynthesis and resistance genes, (2) confirmed the cloned DNA encoding C-1027 biosynthesis by gene disruption, (3) developed a genetic system for *S. globisporus* C-1027, and (4) demonstrated that one can manipulate C-1027 biosynthesis genes *in vivo*. These results represent the first successful cloning of an enediyne biosynthesis gene cluster, lay the foundation for further characterization of C-1027 biosynthesis, and should shed light on manipulation of biosynthetic pathways for drug discovery in other enediyne antibiotic-producing organisms.

*Order* →

L11 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2002 ACS  
AN 1998:587982 CAPLUS  
TI Cloning of gene for biosynthesis of novel antitumor antibiotic C1027  
AU Liu, Wen; Li, Yuan  
SO Zhongguo Kangshengsu Zazhi (1998), 23(3), 166-169  
AB C1027 is a new antitumor antibiotic produced by *Streptomyces globisporus* C1027. Digested total DNA fragments of *S. globisporus* C1027 were inserted in plasmid pIJ702 and then transformed into *S. lividans* TK54. Recombinants were co-cultured with C1027 block mutants AF40 and AF44. According to results of antimicrobial assay and spermatogonial assay, recombinant No. 74 and No. 101 could complement block mutant AF40, and recombinant No. 28 complemented block mutant AF44. SDS-PAGE anal. indicated that secretion of apoprotein could be restored after co-culture. Purified product from co-culture supernatant of recombinant No. 74 and block mutant AF40 was verified to be C1027 by UV spectrum. Thus, recombinant plasmid pIJF74, pIJF101 and pIJF28 contain genes involved in C1027 biosynthesis.

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L11 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2002 ACS  
AN 1998:354010 CAPLUS  
TI Nucleotide sequence analysis of an antibiotic biosynthesis gene of *streptomyces globisporus*  
AU Mao, Xiaohua; Li, Yuan  
SO Weishengwu Xuebao (1998), 38(1), 32-36  
AB Antitumor antibiotic C-1027 produced by *Streptomyces globisporus* has very high biol. activity both *in vivo* and *in vitro*. Research works showed that one of biosynthesis gene of C-1027 is in the F2 DNA fragment. The plasmid pUC18 was used as vector to subclone the F2 DNA fragment. The nucleotide sequence anal. for F2 DNA fragment was carried out. An open reading frame in F2 encoded 122 amino acids.

L11 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2002 ACS  
AN 1997:721900 CAPLUS  
TI Random amplified polymorphic DNA technique to study antibiotic biosynthesis gene cloning and expression  
AU Mao, Xiaohua; Li, Yuan; Shi, Lianying  
SO Shengwu Gongcheng Xuebao (1997), 13(2), 195-199

L11 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2002 ACS  
AN 1989:228301 CAPLUS  
TI Biosynthesis of NCS Chrom A, the chromophore of the antitumor antibiotic neocarzinostatin  
AU Hensens, Otto D.; Giner, Jose Luis; Goldberg, Irving H.  
SO J. Am. Chem. Soc. (1989), 111(9), 3295-9

L13 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2002 ACS  
AN 1994:3042 CAPLUS  
TI The amino acid sequence of actinoxanthin apoprotein deduced from the base sequence of the gene  
AU Sakata, Nobuo; Mase, Toshiyuki; Ikeno, Souichi; Hori, Makoto; Otani, Toshio  
SO J. Antibiot. (1993), 46(9), 1475-7

L13 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2002 ACS  
AN 1993:575004 CAPLUS  
TI Cloning and nucleotide sequencing of the antitumor antibiotic C-1027 apoprotein gene  
AU Sakata, Nobuo; Ikeno, Souichi; Hori, Makoto; Hamada, Masa; Otani, Toshio  
SO Biosci., Biotechnol., Biochem. (1992), 56(10), 1592-5

L13 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2002 ACS  
AN 1993:511563 CAPLUS  
TI The amino acid sequence of neocarzinostatin apoprotein deduced from the base sequence of the gene  
AU Sakata, Nobuo; Minamitani, Shinichi; Kanbe, Toshie; Hori, Makoto; Hamada, Masa; Edo, Kiyoto  
SO Biol. Pharm. Bull. (1993), 16(1), 26-8

L13 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2002 ACS  
AN 1993:97695 CAPLUS  
TI Isolation and construction of restriction endonuclease map of plasmid pSGL1 from antitumor antibiotic C-1027 production strain Streptomyces globisporus  
AU Li, Xiaoping; Li, Yuan  
SO Zhongguo Kangshengsu Zazhi (1992), 17(5), 326-32

could be  
useful against  
DNA claims